above. Windows 95, Windows 98, Windows NT and Windows 2000 are trademarks of Microsoft Corporation.

Generally, Windows provides access to computing system resources via a graphical representation of computing system resources called a desktop. The Windows desktop allows a user of the computer system, for example, to navigate and manage files within file systems contained within one or more storage devices (e.g., disks) associated with the computing system. Limited device management is also provided via the Windows desktop and associated Windows applications that provide graphical user interfaces for device management functions. One example of a software application included with Windows that provides such file system and device management capabilities via a graphical user interface is the Windows Explorer application program.

A user can use Windows Explorer to view and graphically navigate and manage certain resources associated with the computer system operating the Windows operating system. To do so, a left side of the graphical user interface within Windows Explorer provides a hierarchical and graphical representation of resources related to the computing system. For example, Windows Explorer can represent directories on disk(s) accessible to the computer system as a hierarchical arrangement of folder icons paired with a simple name of the directory corresponding to that folder. Each folder icon and simple name pair in the hierarchy directly corresponds to the directory on the disk having that simple name that contains files and/or other folders (i.e., subdirectories). A user can click or double-click a folder icon/simple name pair (hereinafter referred to as folder icon) in the hierarchy to open or close that folder.

In response to a user clicking a folder icon to "open" that folder in the hierarchy, Windows Explorer redisplays the folder icon in the hierarchy on the left side of the GUI to appear as an "open" folder icon and modifies the left-side hierarchy to include a display of any sub-folders icons and simple name pairs of sub-directories that exist hierarchically below or "within" the open folder. In addition, on the right side of the Windows Explorer graphical user interface, Windows Explorer displays resource identifiers for any files or folders that exist within the selected (i.e., the opened) folder in the hierarchy.

Some graphical user interfaces of software applications allow a user to control whether resource identifiers are shown using simple names or by using fully qualified resource identifiers. In some cases, if many resource identifiers must be shown, the graphical user interface can display the resource identifiers (fully qualified or with just the simple name) in an up/down scrollable list of resource identifiers. In addition, if the resources are displayed using their fully qualified resource identifier and the hierarchy location portion of a resource identifier (e.g., the path name of a file) contains many directory names, that fully qualified resource identifier might contain alphanumeric characters that extend in length beyond the bounds (e.g., the right most side) of a window in the graphical user interface. In other words, the entire combination of hierarchy location followed by the simple name of a file or directory or other resource might not be completely visible in the window. In such cases, the graphical user interface can also provide a right/left scrollbar to allow the user to scroll the list of resource identifiers to the left to allow the user to view the simple name that follows the hierarchy location within the fully qualified resource identifier.

Many graphical user interface based applications such as Windows Explorer also allow a user to elect to arrange a list of icons/resource identifier pairs that the graphical user interface displays according to certain pre-defined views. For example, the user may elect to have a graphical user interface display icon/resource identifier pairs alphabetically, or by creation date, by size, by author, and so forth. If a user elects to arrange a view of icon/resource identifier pairs based on one of these attributes, Windows Explorer displays the sorted list of icons according to the user selected attribute (e.g., size, date, etc.) within the graphical user interface display.

Operating systems such as Windows and variants of Unix provide another graphical user interface feature that allows a user to create a "shortcut" or "alias" to a particular resource, such as a file or directory shortcut. A shortcut or alias is essentially a simple name placeholder or link that points back to the original copy of the file or directory within the file system. A user can provide a simple name to a shortcut or alias that is the same or that is different than the simple name of the original resource to which that shortcut or alias references. The user can then copy or move the shortcut or alias to

another location in the file system. When a graphical user interface of the operatig system displays, for example, a resource identifier listing for a directory containing the shortcut or alias, the graphical user interface lists the user defined simple name for the shortcut or alias that references the actual resource (e.g., the real file or directory) which is located in another portion of the hierarchy of the file system.

SUMMARY OF THE INVENTION

Each of the aforementioned conventional techniques that provide representations of resources within a graphical user interfaces suffer from certain deficiencies and/or limitations. Such limitations are due in part to operational limitations of the conventional graphical user interfaces provided by those applications and in particular, to limitations in the ability of conventional graphical user interfaces to represent and name resources in a concise and flexible manner.

For example, the aforementioned conventional hierarchical naming scheme employed by typical conventional graphical user interface-based operating systems requires that a fully qualified resource identifier for a resource include the hierarchy location followed by the simple name of the resource. Such a naming scheme can make it difficult for a user to quickly discern the simple name assigned to the resource from the hierarchy location of the resource. This visual obscurity might result, for example, from many simple names of many resources (e.g., a list of files) appearing in different locations in a list of fully qualified resource identifiers each having a varying length. Consider, for example, when Windows Explorer displays a long list of files having path names that each indicate different locations of respective files in a file system. Since each path name (i.e., each hierarchy location) may be a different length, the simple names of each file (i.e., the file names) do not line up vertically with each other since each simple name is appended to the end of the resource identifier (i.e., after the hierarchy location or path name). This makes it difficult for a user to quickly perform a visual top to bottom scan of the resource identifier list in the graphical user interface to ascertain the simple name of each file. The user must look at the rightmost end of each resource identifier to discern each simple name, and since the resource identifiers are fully